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EXAMINER

CALEY, MICHAEL H

ART UNIT PAPER NUMBER

2882

DATE MAILED: 05 23 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,970

Applicant(s)

CANACE ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Claim Objections

Claim 14 is objected to because of the following informalities:

The connector referenced in line 15 lacks antecedent basis. The electrical connectors disclosed in claim 8 on which 14 is dependent reference pins 111. The conductive gasket disclosed by Applicant does not circumscribe these pins. Claim 14 is assumed to be dependent on claim 10 for examination on the merits. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sampson et al. (U.S. Patent No. 4,767,179 "Sampson").

Regarding claim 1, Sampson discloses an optoelectronic module having:

electronic circuitry (Figure 4 elements 16 and 44);

an optical subassembly coupled to the electronic circuitry (Figure 4 element 16);

and

a housing (Figure 2 elements 14 and 18) enclosing the electronic circuitry and the optical subassembly, the housing comprising first and second mating parts (Figure 2 elements 14 and 18), at least one of the first and second parts having a latch (Figure 2 element 78) and the other of the first and second parts having a shoulder (Figure 2

element 38) positioned to engage the latch when the first and second parts are mated to form the housing and hold the first and second parts together.

Regarding claim 2, Sampson discloses the latch and the shoulder as able to be disengaged from each other after the first and second parts of the housing are mated (Column 3 lines 9-15).

Regarding claim 3, Sampson discloses the latch as having a resilient bar having first and second ends, the bar cantilevered from one part of the housing at the first end and having a dog at the second end adapted to engage the shoulder on the other part of the housing (Figure 2 element 78).

Regarding claim 5, Sampson discloses the latch as accessible from external of the module so that it can be biased out of engagement with the shoulder without damaging the module.

Regarding claim 6, Sampson discloses the housing as comprising an outer surface (Figure 2 element 36) and the second end of the latch as adjacent the outer surface of the housing when assembled and able to be biased out of engagement with the mating shoulder manually.

Regarding claim 19, Sampson discloses mounting pins protruding from the housing for mounting the module to external circuitry (Figure 1 element 36).

Claims 1, 7, and 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurashima et al. (U.S. Patent No. 5,596,665 "Kurashima").

Regarding claim 1, Sampson discloses an optoelectronic module having:
electronic circuitry (Figure 2 element 8);

an optical subassembly coupled to the electronic circuitry (Figure 2 elements 5 and 6); and

a housing (Figure 2 elements 4 and 7) enclosing the electronic circuitry and the optical subassembly, the housing comprising first and second mating parts (Figure 2 elements 28 and 40), at least one of the first and second parts having a latch (Figure 2 element 28) and the other of the first and second parts having a shoulder (Figure 2 element 40) positioned to engage the latch when the first and second parts are mated to form the housing and hold the first and second parts together.

Regarding claim 7, Kurashima discloses the housing as comprising slots through which fluid may enter and exit the module (Figure 2 element 4, Figure 19 element 30).

Regarding claim 8, Kurashima discloses electrical connectors as protruding from the module for electrically coupling the electronic circuitry to the external circuitry (Figure 1 element 43).

Regarding claim 9, Kurashima discloses the electronic circuitry as having a printed circuit board (Figure 2 element 8) and the electrical connectors as pins extending from the printed circuit board (Figure 1 element 43).

Regarding claim 10, Kurashima discloses a connector adapted to mate with the optical plug of an optical fiber (Figure 1 element 10).

Regarding claim 11, Kurashima discloses the connector as integral with the housing (Figure 2 element 7).

Regarding claim 12, Kurashima discloses the electronic circuitry as having a printed circuit board (Figure 2 element 8) and the optical subassembly as coupled to the printed circuit board by flex circuit (Figure 3 element 46)

Regarding claim 13, Kurashima discloses the flex as allowing the optical subassembly to move relative to the printed circuit board (Figure 3 element D).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson in view of DeAndrea et al. (U.S. Patent No. 5,708,743 "DeAndrea").

Sampson discloses all of the proposed limitations except for a second subset of mating latches and shoulders in which the latch is on the second part and the shoulder is on the first part, opposite the arrangement of the first subset. DeAndrea teaches a similar arrangement in which a housing is constructed by means of an adjoining connector in which a latch (Figure 8 part 89) is formed on the part of the shoulder (Figure 8 element 84).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a secondary latch and shoulder in the opposite arrangement of the first subset. DeAndrea's connector for providing a housing for the coupler contains features additional to those disclosed by Sampson for ensuring a proper alignment between the two parts and therefore efficient coupling to the optoelectronic device. DeAndrea defines a slot (Figure 8 element 89) to receive a latch (Figure 8 element 79) in addition to the latch and shoulder arrangement to construct a connector providing stability in both horizontal and vertical

directions. Changing the slot to a shoulder would have been an engineering expediency to create even more stability than DeAndrea's connector. Such an improvement would have been motivated by a desire to lengthen the life of the connector by decreasing the amount of stress to each latch and shoulder in the event of tensioning stress. The improvement to Sampson's device would also provide a secondary latching mechanism in the case one or more of the latches may break or otherwise fail.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Chesavage (U.S. Patent No. 6,366,380).

Kurashima fails to disclose a device providing EMI protection. Chesavage, however, teaches a gasket providing EMI protection circumscribing the connector having fingers extending radially from the shell adapted to contact and protrude through a faceplate to provide EMI shielding (Figure 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided such an EMI gasket to the housing structure disclosed by Kurashima. It is old and well known in the art that EMI shielding is essential to maintain an efficient coupling in an optoelectronic connection device, especially when dealing with high transmission rates, such as GBIC. One would have been motivated to construct such a shielding mechanism in Kurashima's device in order to improve the bit error rate of transmission and enable the connector to operate efficiently in a high transmission rate application. Such an improvement would have been advantageous to reduce the interference between the electrical and optical components of the device. Additionally, it would have been advantageous to maintain the same

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structure as taught by Chesavage to provide full shielding around the connector and a stable mechanical configuration within the housing.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Corradetti et al. (U.S. Patent No. 5,011,246 "Corradetti").

Kurashima discloses all of the proposed limitations except for a conductive shield to cover the electronic circuitry on the printed circuit board. Corradetti, however, teaches a shield (Figure 3 element 298) covering the printed circuit board of an optoelectronic device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have covered the printed circuit board in the module disclosed by Kurashima with a conductive shield. It is old and well known in the art that EMI shielding is essential to maintain an efficient coupling in an optoelectronic connection device, especially when dealing with high transmission rates, such as GBIC. One would have been motivated to construct such a shielding mechanism in Kurashima's device in order to improve the bit error rate of transmission and enable the connector to operate efficiently in a high transmission rate application. Such an improvement would have been advantageous to reduce the interference between the electrical and optical components of the device.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurashima in view of Corradetti and in further view of Burton et al. (U.S. Patent No. 4,911,519 "Burton").

Kurashima and Corradetti disclose all of the proposed limitations except for the shield as comprising two shields. Burton, however, teaches an EMI shield as constructed on the bottom surface of an optoelectronic module (Figure 3 element 74).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided two shields to provide EMI protection in the optoelectronic module. One would have been motivated to provide a top shield and bottom shield for the device as disclosed by Kurashima to provide protection between elements above and below the optoelectronic device and between the devices within the module. It would have been especially advantageous in Kurashima's design to have provided an EMI shield on the bottom surface to protect against interference between the internal and external circuit boards.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (703) 305-7913. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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April 9, 2003

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